

CHAPTER 2

Abnormal Vaginal Bleeding

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The problem of abnormal vaginal bleeding can be daunting, given the vast differential it may represent. When caring for patients with this complaint, it is essential to be systematic during the physical examination and workup. Keeping the focus on common problems is helpful, and risk stratifying the patient will prevent unnecessary testing and save time.

Categorizing the patients as prepubertal, premenopausal, perimenopausal, and postmenopausal is a valuable approach. For prepubertal girls, trauma, abuse and malignancy are frequent causes. In patients younger than 35 years with a normal examination anovulatory causes are responsible for most episodes of irregular vaginal bleeding. In perimenopausal patients, however, endometrial hyperplasia and carcinoma are relatively common; endometrial sampling and pelvic imaging are indicated as part of the initial investigation.

Malignancy is of primary concern when confronted with vaginal bleeding in a postmenopausal woman. Because bleeding may also occur from the lower genital tract, vulvar, vaginal, and cervical causes must be excluded.

PREPUBERTAL VAGINAL BLEEDING

Before menarche, common causes of abnormal vaginal bleeding are trauma, sexual abuse, and malignancy. A careful examination under anesthesia is preferred because more than half of these cases involve a focal lesion of the genital tract and more than 20% are malignant.

Symptoms

- Vaginal bleeding of any quantity
- Pelvic pain
- Dysuria
- Vaginal discharge
- History of blunt trauma to genitals (e.g., falling onto a bicycle bar)

Signs

- Friable cervix
- Malodorous or mucopurulent vaginal discharge
- Genital tract lesion; trauma versus infection versus malignancy
- Pelvic mass on bimanual examination

Workup

- Examination (under anesthesia if necessary) to exclude genital tract lesions and infection
- Wet mount to exclude *Trichomonas* and yeast
- Cervical cultures for *Neisseria gonorrhoeae* and *Chlamydia trachomatis*
- Pelvic ultrasound

Comments and Treatment Considerations

Minimal vaginal bleeding is frequently seen in neonates due to withdrawal from maternal estrogen in the postpartum period. Treatment of sexually transmitted infections and involvement of child welfare agencies in the event of abuse are important aspects of treatment. Evaluation by a pediatric gynecologist for lower genital tract masses should be considered for cases in which the diagnosis is uncertain.

VAGINAL BLEEDING DURING THE REPRODUCTIVE YEARS

During the reproductive years, most causes of irregular bleeding are benign. In patients younger than age 35, the most common cause is pregnancy. Once pregnancy is excluded, the lower genital tract is evaluated for infections, lesions, or trauma. An ultrasound may be performed if fullness is found to rule out fibroids or other masses.

Although anovulatory cycles and uterine leiomyomata are frequently responsible for abnormal vaginal bleeding in the perimenopausal patient, early consideration of malignancy is important as the incidence of genital tract cancers increases dramatically after age 40. Lastly, dysfunctional uterine bleeding (DUB) is a diagnosis of exclusion, only to be made after infectious, endocrine, iatrogenic, anatomic, and malignant causes have been considered.



VAGINAL BLEEDING IN EARLY PREGNANCY

Pregnancy-related causes vary by gestational age. During the first trimester, pregnancy failure, molar pregnancy, and ectopic pregnancy are considered. In these cases, serum β -human chorionic gonadotropin (β -hCG) levels may be useful. Ultrasonography is a valuable diagnostic tool for confirming a viable pregnancy and appropriate follow-up.

Ectopic Pregnancy

An ectopic pregnancy is one that implants after fertilization in an anatomic location outside of the uterine cavity. The most common location for an ectopic pregnancy is the fallopian tube; other locations include the ovary, abdominal cavity, and uterine cervix. Risk factors for ectopic pregnancy include one or more episodes of salpingitis or pelvic inflammatory disease, surgical manipulation of the fallopian

tubes, and a previous ectopic pregnancy. Although there have been reports of ectopic pregnancies reaching term and resulting in the birth of a viable infant, ectopic pregnancies can cause life-threatening hemorrhage and should be treated as a gynecologic emergency.

Symptoms

- Abnormal vaginal bleeding ++++
- Breast tenderness +++
- Amenorrhea +++
- Lower back pain
- Pelvic pain +++
- Nausea

Signs

- Blood from cervical os ++++
- Unilateral pelvic pain +++
- Tender pelvic mass
- Bluish discoloration and softening of cervical os

Workup

- Physical examination including pelvic examination
- Urine pregnancy test
- Serial serum β -hCG as indicated
- Abdominal and/or intravaginal ultrasound
- ABO and Rh determination (to detect patients at risk of maternal Rh sensitization)
- Cervical cultures to rule out infection
- CBC
- Type and crossmatch for blood transfusion if necessary
- Culdocentesis

Comments and Treatment Considerations

Patients suspected of having an ectopic pregnancy should be rapidly assessed with ultrasound, considered the gold standard for diagnosis of this condition. Patients with ectopic pregnancies who are hemodynamically stable may be considered for medical management; those with excessive bleeding or unstable vital signs should be considered for immediate surgical management.



THREATENED ABORTION

A threatened abortion is defined as vaginal bleeding during early (<20 weeks) pregnancy, without other definitive cause. It is estimated that up to one third of all intrauterine pregnancies may end as spontaneous abortions. In patients with threatened abortions the cervical os is closed. Vaginal bleeding in pregnancy with an open cervical os may indicate an inevitable, complete, or missed abortion. Vaginal bleeding is common in intrauterine pregnancies; many cases of vaginal bleeding in early pregnancy result in delivery of term infants.

Symptoms

- Vaginal bleeding ++++
- Abdominal or pelvic pain
- Amenorrhea

Signs

- Blood from cervical os ++++
- Closed cervical os ++++
- Enlarged uterus +++
- Cervical softening and bluish discoloration

Workup

- Urine pregnancy test
- CBC
- Pelvic and/or intravaginal ultrasound
- Serum β -hCG as indicated
- ABO and Rh blood typing (to detect patients at risk for maternal Rh sensitization)

Comments and Treatment Considerations

Vaginal bleeding in early pregnancy is very common. Pelvic and/or intravaginal ultrasound should be performed to determine fetal anatomy, fetal heart activity, and status of the cervix. If there is normal fetal anatomy, normal fetal heart activity, and no signs of excessive uterine contractions or cervical opening, the patient can be managed expectantly. Some authorities recommend avoidance of intercourse (pelvic rest) to decrease the chance of uterine stimulation. If the patient exhibits abnormal fetal anatomy, lack of fetal heart activity, or indications of significant uterine contractions or cervical dilatation, an obstetrician should be consulted.

**MOLAR PREGNANCY**

A molar pregnancy occurs when an egg devoid of maternal genetic material is fertilized. In most cases, no fetus develops, and the products of conception consist of multiple intrauterine cystic structures. Less commonly, some molar pregnancies consist of some normal products of conception, along with the multiple cystic structures associated with molar pregnancies. In the United States molar pregnancies occur in approximately 1 in 1000 pregnancies. Risk factors for molar pregnancy include maternal age more than 40 years, race (some Asian and Mexican populations are at high risk, whites have a higher incidence of molar pregnancy than do African Americans), previous molar pregnancy, and a diet low in carotene.

Symptoms

- Passage of "grapelike" tissue per vagina +++
- Vaginal bleeding
- Symptoms of toxemia early in pregnancy

- Nausea +++
- Amenorrhea +++
- Lack of fetal movement +++

Signs

- Blood from cervical os
- Enlarged uterus +++
- Higher than expected levels of serum hCG +++
- Enlarged uterus +++
- Signs of toxemia early in pregnancy

Workup

- Pelvic and/or intravaginal ultrasound
- Serial serum β -hCG levels
- Pelvic examination
- CBC

Comments and Treatment Considerations

The diagnostic test of choice for molar pregnancy is pelvic and/or intravaginal ultrasound. The treatment of choice for a molar pregnancy is dilation and curettage (D&C). Following D&C, serial serum β -hCG levels must be followed until they reach normal, nonpregnant levels. Because of the possibility of the development of further trophoblastic disease, including choriocarcinoma, consultation with an obstetrician should be obtained for management of patients with molar pregnancy.



MENORRHAGIA

Symptoms

- Heavy menstrual bleeding, typically in excess of 7 days' duration

Signs

- Pallor
- Enlarged uterus

Workup

- Pap smear should be current
- CBC, thyroid-stimulating hormone (TSH)
- Pelvic ultrasound
- Endometrial biopsy in selected patients

Comments and Treatment Considerations

Menstrual bleeding normally lasts from 3 to 7 days, but can be as short as 1 day; regularity, however, is more important than length. Average menstrual blood loss is less than 80 mL. Consider submucosal fibroids, pregnancy, adenomyosis, endometrial hyperplasia, malignancy, and DUB.

In the perimenopausal patient, pelvic sonography and endometrial biopsy should be included in the initial evaluation. A pelvic ultrasound should also be performed to rule out uterine leiomyomata, which are present in more than half of women ages 40 or greater and 70% of women older than age 50.

In a patient younger than age 35 with a normal history and physical examination, uterine bleeding due to dysfunctional causes is most common and usually can be managed with hormonal agents, such as combined contraceptives or medroxyprogesterone. In most instances DUB is anovulatory in origin.

If the patient does not respond to initial medical treatments, pelvic sonography and endometrial biopsy should be considered. Inherited coagulopathy may present as menorrhagia in an otherwise healthy patient.



MENOMETRORRHAGIA

Symptoms

- Bleeding between periods at irregular intervals and flows
- Bleeding can occur at any time between menstrual cycles

Signs

- Weakness
- Fever
- Abdominal and cervical motion tenderness
- Ecchymosis and petechiae
- Tender vaginal or cervical ulcers
- Friable cervix with mucopurulent or malodorous discharge
- Cervical mass

Workup

- Cervical cultures as indicated, especially in younger patients because infectious causes are very common younger than age 25
- Wet mount demonstrating yeast vaginitis, leukorrhea, or *Trichomonas*
- Ultrasound

Comments and Treatment Considerations

Ovulatory bleeding is physiologic and can be confirmed with basal body temperatures or ovulation kits. Serious causes are endometrial polyps, endometrial hyperplasia and carcinoma, and cervical carcinoma.

Systemic diseases that may result in abnormal vaginal bleeding include many endocrine and hematologic conditions. A thorough history and physical examination usually reveal a systemic problem. Once pregnancy is excluded, the lower genital tract should be examined for infections, lesions, or trauma. Although dysplasia is rarely associated with bleeding, cervicitis may be, especially after intercourse.

Cervical and endometrial polyps are also associated with postcoital bleeding. A bimanual examination may reveal uterine enlargement (pregnancy, leiomyomata, carcinoma), tenderness (pelvic inflammatory disease), or adnexal masses (tumors, tubo-ovarian abscess).

Although iatrogenic causes are less frequent than DUB, they must be considered during the initial evaluation. Irregular menstrual bleeding can be caused by common medications such as hormonal contraceptives, corticosteroids, thyroid agents, tamoxifen, antipsychotics, SSRIs, and anticoagulants. Even herbal supplements such as soy and ginseng can contribute to abnormal uterine bleeding.

Intrauterine devices commonly cause increased and irregular vaginal bleeding.



POLYMENORRHEA

Symptoms

- Menstrual cycles occurring more frequently than every 21 days

Signs

- Weakness
- Pallor

Workup

- CBC, TSH
- Endometrial sampling if refractory to treatment

Comments and Treatment Considerations

This pattern is usually due to a luteal phase defect. It responds well to hormonal management. Biopsy is indicated only when refractory to pharmacotherapy.



POSTMENOPAUSAL BLEEDING

Menopause is defined as the absence of menses for greater than 12 months and laboratory tests and/or physical findings consistent with ovarian failure.

Symptoms

- Any vaginal bleeding after menopause is reached

Signs

- Atrophic vaginal mucosa
- Firm to hard cervix
- Cervical mass or polyp
- Uterine enlargement

Workup

- Pelvic ultrasound—If the endometrial thickness is 4 to 5 mm or greater, endometrial sampling is indicated. An endometrial thickness of 4 mm or less conveys a negative predictive value of 97% for endometrial malignancy.
- Pipelle endometrial biopsy possesses a sensitivity of 85% to 90% for diagnosing endometrial abnormalities.
- D&C, once the gold standard in evaluating abnormal vaginal bleeding (AVB) in peri- and postmenopausal patients, may miss endometrial polyps and submucosal fibroids. Although Pipelle endometrial biopsy is relatively simple and usually does not involve cervical dilation, it carries a higher false-negative rate than D&C for detection of endometrial polyps and hyperplasia.
- Combined transvaginal measurement of the endometrial thickness and Pipelle endometrial biopsy, has a sensitivity of nearly 100% for detection of endometrial carcinoma.

Comments and Treatment Considerations

Aside from bleeding on initiation (first 3 months) or discontinuation of hormone replacement therapy, postmenopausal bleeding of any quantity warrants aggressive investigation. Simple endometrial hyperplasia without atypia is treated with medroxyprogesterone 10 mg daily for 3 months. The dose may be increased to 40 mg for breakthrough bleeding.

Atrophic vaginitis is best managed with topical estrogen. If topical estrogen is used in full strength (one applicator vaginally three times weekly), progestin supplementation should also be prescribed in order to prevent endometrial proliferation.

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